

embodiment, the calling radio state report includes a control value 23 at the time when the transmission power is autonomously controlled by the autonomous transmission power controller 10 of the mobile station. This control value 23 indicates the amount by which the transmission power of the control channel is reduced from the maximum transmission power when transmitting the calling radio state report by taking as a reference the maximum transmission power (maximum transmission power reported by the report information 1) at which the output can be made, when the reception level of the own zone measured during the standby mode of the mobile station is greater than a predetermined threshold value. The control value 23 is reported by a bit pattern shown in FIG. 27 using a definition region peculiar to the operator within the format of the mobile station type shown in FIG. 9.

In this embodiment, the up transmission power control of the mobile station is carried out in the following manner. That is, when the base station receives the calling radio state report, the reception level measuring unit 14 measures the reception level of the calling radio state report. An initial transmission power value determining unit 21 compares the measured reception level with a threshold value which is used to determine the optimum up initial transmission power value, and judges the level difference between the measured reception level and the threshold value. A value which is obtained by correcting the transmission power determined by the reported mobile station type 11 and control value 23 by use of the level difference, is regarded as an initial transmission power value 22 which is dependent on the mobile station type. This initial transmission power value 22 is converted into a corresponding bit pattern as shown in FIG. 28, and the bit pattern is notified to the mobile station when making the radio channel designation. In FIG. 28, a symbol "\*" indicates a reserve bit. In addition, an indication "3 W-8 dB/2 W-4 dB", for example, indicates that the 3 W mobile station has a transmission power of 3 W-8 dB and the 2 W mobile station has a transmission power of 2 W-4 dB. The mobile station which receives the above notification sets the up transmission power 18 to the initial transmission power value 22.

FIG. 29 is a flow chart for explaining the process of determining the up initial transmission power value in the fourth embodiment. In FIG. 29, Lu denotes the measured reception level, Ltu2 denotes the threshold value for controlling the up transmission power, P denotes the reported mobile station type (maximum transmission power that can be transmitted from the mobile station), and C denotes the autonomous transmission power control value.

In FIG. 29, a step S41 obtains a level difference A between the reception level Lu and the threshold value Ltu2 for controlling the up transmission power. A step S42 decides whether or not  $0 \text{ dB} < A < 4 \text{ dB}$ , and a step S43 sets the initial transmission power value to  $P - C - 0 \text{ dB}$  if the decision result in the step S42 is YES. If the decision result in the step S42 is NO, a step S44 decides whether or not  $-4 \text{ dB} < A < 0 \text{ dB}$ , and a step S45 sets the initial transmission power value to  $P - C - 0 \text{ dB}$  if the decision result in the step S44 is YES. If the decision result in the step S44 is NO, a step S46 decides whether or not  $4 \text{ dB} < A < 8 \text{ dB}$ , and a step S47 sets the initial transmission power value to  $P - C - 4 \text{ dB}$ . If the decision result in the step S46 is NO, a step S48 decides whether or not  $-8 \text{ dB} < A < -4 \text{ dB}$ , and a step S49 sets the initial transmission power value to  $P - C + 4 \text{ dB}$  if the decision result in the step S48 is YES.

A step S52 decides whether or not  $28 \text{ dB} < A$ , and a step S53 sets the initial transmission power value to  $P - C - 28 \text{ dB}$

if the decision result in the step S52 is YES. If the decision result in the step S52 is NO, a step S54 decides whether or not  $-28 \text{ dB} < A$ , and a step S55 sets the initial transmission power value to  $P - C + 28 \text{ dB}$  if the decision result in the step S54 is YES. The process returns to the step S41 if the decision result in the step S54 is NO.

In other words, if the reported mobile station type P (=number 11) is 3 W and the control value C (=number 23) is 4 dB, for example, the initial transmission power value 22 is set to a transmission power 8 dB lower than 3 W if the reception level Lu is higher than the threshold value Ltu2 by more than 4 dB and less than 8 dB.

Hence, for the following conditions shown on the left side, the initial transmission power value 22 is set as shown on the corresponding right side, although some of the conditions are omitted in FIG. 29 for the sake of convenience.

0 dB < A < 4 dB →	Initial transmission power value = P - C - 0 dB
-4 dB < A < 0 dB →	Initial transmission power value = P - C + 0 dB
4 dB < A < 8 dB →	Initial transmission power value = P - C - 4 dB
-8 dB < A < -4 dB →	Initial transmission power value = P - C + 4 dB
8 dB < A < 12 dB →	Initial transmission power value = P - C - 8 dB
-12 dB < A < -8 dB →	Initial transmission power value = P - C + 8 dB
12 dB < A < 16 dB →	Initial transmission power value = P - C - 12 dB
-16 dB < A < -12 dB →	Initial transmission power value = P - C + 12 dB
16 dB < A < 20 dB →	Initial transmission power value = P - C - 16 dB
-20 dB < A < -16 dB →	Initial transmission power value = P - C + 16 dB
20 dB < A < 24 dB →	Initial transmission power value = P - C - 20 dB
-24 dB < A < -20 dB →	Initial transmission power value = P - C + 20 dB
24 dB < A < 28 dB →	Initial transmission power value = P - C - 24 dB
-28 dB < A < -24 dB →	Initial transmission power value = P - C + 24 dB
28 dB < A →	Initial transmission power value = P - C - 28 dB
A < -28 dB →	Initial transmission power value = P - C + 28 dB

The control procedure of the up transmission power carried out thereafter based on the up reference reception level so that a convergence is made to the optimum value, is the same as the control sequence of the up transmission power in the conventional case described above in conjunction with FIG. 6. Hence a description thereof will be omitted.

FIG. 30 shows a control sequence of the up transmission power when the mobile station is called in the fourth